

# when your season rolls around...



## be ready to roll with a NU nes sod harvester



### NU nes Slab Sod Harvester . . .

lifts, cuts, and conveys slabbed sod to loading platform. Handlers can load directly on to pallet as tractor moves.

PATENT APPLIED FOR

- With a NU nes Sod Harvester and three men you can lift, cut, roll and palletize up to 1200 square yards of sod per hour.
- The harvester, developed at Cal-Turf Farms in California, is designed to handle any length of rolled or slabbed sod.
- Field grading of sod is done by the tractor operator, who has clear visibility at all times.
- Hydraulic controls permit quick and easy adjustment for all conditions.
- The sod harvester travels alongside, never on the turf, during harvesting and can pick up and roll sod at any time your tractor can operate in your field.
- Sod can be cut with any type of sod cutter. The long ribbons can then be lifted and cut to any desired length from 24" to 90", size depending on thickness of sod.
- Loaded pallets can be spotted for later field removal and be clear of the next harvest run. If direct truck loading is desired, a conveyor extension is available.
- The basic power train is a Ford LLG-2110 wheel tractor. The sod harvester can travel at speeds up to 17 MPH for quick transportation between plots.
- The efficiency of this all-mechanical operation has been proven on Cal-Turf Farms in Patterson, California, and it can solve the problem of quick and economical harvesting of sod for all turf farmers.

For more information please contact:

**THE JOHN NUNES MECHANICAL HARVESTING CO.**

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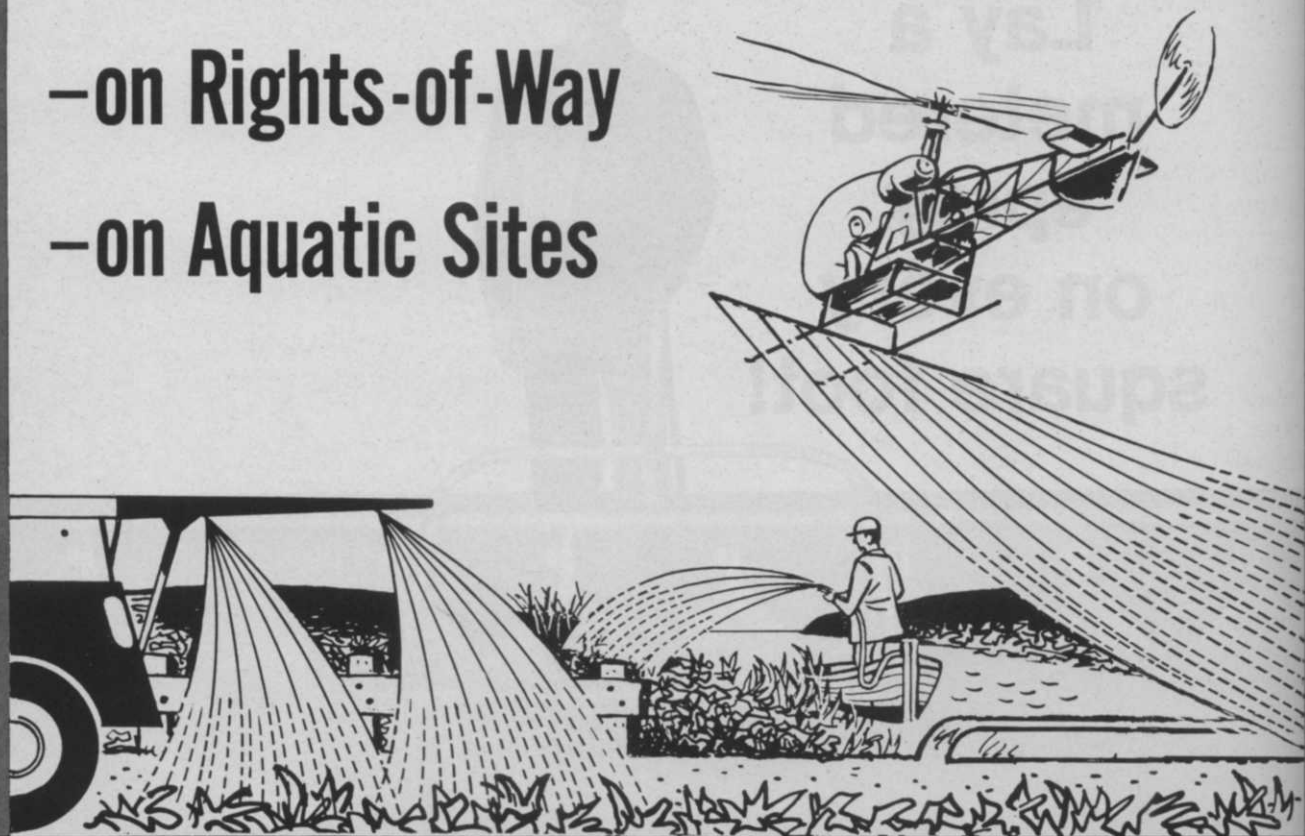
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-on Rights-of-Way

-on Aquatic Sites



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## The Cover

Forest City Tree Protection Company of Cleveland, O., drew a special tree planting assignment this spring. Four of



52 original sugar maples needed replacement on Erieview Plaza, an early phase of the bright new look for Cleveland which is a part of the Urban Renewal Program.

The Plaza adjoins Erieview Towers, Cleveland's new skyscraper, and overlooks Lake Erie. Original trees were planted by Ed Irish, Charles F. Irish Co., Inc., Detroit, Mich., 3 years ago.

William Lanphear, vice-president of the Forest City group, reports that Forest City has maintained the trees since 1965. Forest City trims, sprays, and fertilizes the trees. Loss of the 4 trees just replaced is thought to be due to premature leafing. The underground garage for Erieview Towers is beneath the Plaza. Planter boxes for the trees extend down into the garage which is heated to 45° F. during the winter season. Heat pipes too close to some of the boxes are thought to have started spring leafing. Trees on the Plaza are subjected to heavy lake winds. Leaves are often blown off or torn.

Forest City Manager Bill Fry, in charge of the replacement planting task, estimated each tree and ball weighed approximately 2½ tons. The replacement sugar maples were 20 years or more in age and 30 feet in height. Vehicles are not permitted on the Plaza proper since it is located over the garage and overlaid with a special patio base. Thus, the Vogt & Conant crane with 85 foot boom was required to pick up the balled trees and swing them distances of up to 90 feet to reach the most distant planting box. Dead trees and ref-

(Continued on page 37)

# WEEDS TREES and TURF

FORMERLY WEEDS AND TURF

May 1968

Volume 7, No. 5

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# what's all this fuss about GRASS?



The controversy over which grass varieties make the best sod is often bewildering. Does Windsor rate higher than Merion? Is straight Merion superior to a Merion/Fescue mix? And how about this new grass, NK-100?

We offer no pat answers to these questions. Furthermore, we are not prejudiced in favor of any one variety or mixture. At McGovern Sod Farms we grow *all* these grasses and are constantly testing new varieties.

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## Industry Needs Your Service

Well landscaped industrial plants are assets to the community and executives responsible for them need the help of the vegetation care industry in developing and maintaining them.

This is the crux of the new survey findings of the American Association of Nurserymen. Wayne Dickson, public relations director for the AAN, who coordinated the reports of 200 top industrial companies, is urging AAN members to take their place as professionals in the field and do a more aggressive job in aiding industries who need help in upgrading their industrial parks, or in developing new grounds. We think Dickson is correct in his view that the vegetation care industry can do a more thorough job in selling itself.

More than 90% of the executives responding to the AAN study said that they felt that attractive landscaping was "important" or "very important" to their companies. These industry leaders believe that building care and lawn care increase employee morale and help attract good employees. They also feel that it increases the receptivity of the community to industry, and that plant sites become a source of pride to communities and to employees.

But even though the industrial executive is aware that attractive grounds improve the corporate image, he still has to be sold. This is the job of the tree care company, landscaper, irrigation contractor, sod producer, nurserymen, and others in the field. A coordinated, planned and scheduled sales effort is probably the weakest area of the average program of companies in such businesses.

The job, then, is to sell the industrial executive on yourself as a professional, with technical ability, equipment, and personnel. Sell renovation or offer help in developing a new plan. Sell a maintenance program, and the fact that a service company can do a better job at less cost than the industrial client can do with his own departmental help. Talk the feasibility of a lease program, where vegetation is leased and maintained. Finally, make the big pitch, that industry today needs to lead in community improvement.

WEEDS TREES AND TURF is the national monthly magazine of urban/industrial vegetation maintenance, including turf management, weed and brush control, and tree care. Readers include "contract applicators," arborists, nurserymen, sod growers, and supervisory personnel with highway departments, railways, utilities, golf courses, and similar areas where vegetation must be enhanced or controlled.





# Be an expert on turf's biggest killers!

More turf may be lost to disease than to any other single cause. Here's a free book from Mallinckrodt that tells you how to spot and control these deadly killers. You get full-color pictures of 17 major turf diseases. Most important, you'll learn how an economical Mallinckrodt preventive spray program keeps grass lush, green and healthy. Your nearby Mallinckrodt distributor has a whole arsenal of turf disease control weapons — including Kroma-Clor® and Ultra-Clor®, for the most effective broad-spectrum control of most major summer diseases. So don't let turf pests spoil your good work. If you're a professional turf manager, send the coupon — and be an expert!

**IMPORTANT** — Always apply turf spray chemicals with a SPRAY-HAWK™ mobile turf sprayer!



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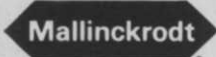
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# Analyze Inland Water Before Any Aquatic Control

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Dr. Stephen J. Toth, Soil Chemist, Rutgers University, uses a Perkin-Elmer Model 303 Atomic Absorption Spectrophotometer which determines the content of metallic elements in water samples down to parts per million level.

## RED ALERT FOR SPRAYMEN

**A**QUATIC WEED CONTROL in inland water has become a complex operation. Spraymen cannot afford to treat haphazardly for aquatic weed control. Nor can they perform pest control measures with safety, unless they know the makeup of the water and the precise effect of pesticides on fish and wildlife.

Recreation and other uses of inland water have become economically important to residents of the area. The blame for any fish kill, if it follows treatment of any type, will surely fall on the professional sprayman who treated the water.

For protection, spraymen need to sample water before treatment. Samples from various areas of the stream or lake, with resulting analyses by a recognized laboratory, can help pin down the causes for any ensu-

ing fish or wildlife kill. Analysis ahead of treatment will likely spot metallic elements which may be dangerous to certain species of fish. This can be particularly helpful in areas where fish are to be stocked for recreational purposes following clean up.

Soil Chemist Dr. Stephen J. Toth, Rutgers University, New Brunswick, N. J., has developed new data on the effects metallic elements have on fish in inland water. In one instance, Dr. Toth found that as little as 1/10 part per million of nickel killed trout. The entire 5500 trout released in a stream stocking program died within 3 days as a result of this small amount of nickel.

In his research, Dr. Toth uses an atomic absorption spectrophotometer. He measures the content of most metallic elements in water samples. The process is

both fast and accurate. More than 50,000 water samples yearly can be processed through his single laboratory.

### Light Spots Elements

Briefly, the spectrophotometer (a Perkin-Elmer Model 303 Atomic Absorption Spectrophotometer) works this way: atoms absorb light at certain frequencies which differ for each metallic element. The amount of light absorbed indicates the element present. It also shows the amount of the metal, or the sensitivity level in parts per million, or in some cases, in parts per billion.

Before development of this system, most analyses of water samples were confined to pH, hardness, turbidity, and the content of sulfates, chlorine, iron, and manganese. But with the new system, Dr. Toth has been

**Table 1. Mean Composition of Surface Waters of New Jersey.**

Constituent	Spring Flow					Summer Flow				
	North	Central	Inner	Southern	Outer	North	Central	Inner	Southern	Outer
	(ppm)									
Calcium	18.3	11.7	11.0	1.0	1.0	31.3	15.8	11.5	0.90	0.90
Magnesium	9.0	4.6	3.5	0.6	0.6	15.3	6.5	2.9	0.40	0.40
Potassium	1.0	1.3	2.6	0.7	0.7	1.3	2.6	3.6	0.60	0.60
Sodium	*	*	*	*	*	6.1	9.0	9.6	3.0	3.0
Iron	0.07	0.26	0.54	0.51	0.51	0.12	0.72	2.0	0.60	0.60
Aluminum	0.09	0.21	0.29	0.33	0.33	0.09	0.08	0.31	0.26	0.26
Silicon	3.5	8.2	11.2	3.6	3.6	3.7	9.3	12.1	4.5	4.5
Chlorine	20.0	13.0	16.0	8.5	8.5	12.8	15.5	15.4	6.7	6.7
Nickel	0.005	0.005	0.009	0.002	0.002	0.008	0.016	0.017	0.001	0.001
Copper	0.013	0.020	0.018	0.018	0.018	0.024	0.030	0.022	0.024	0.024
Manganese	0.020	0.052	0.055	0.013	0.013	0.022	0.056	0.034	0.011	0.011
Zinc	0.010	0.019	0.014	0.014	0.014	0.010	0.085	0.032	0.013	0.013
Chromium	0.002	0.003	0.003	0.001	0.001	0.011	0.013	0.013	0.025	0.025
Strontium	0.040	0.026	0.027	0.004	0.004	0.129	0.065	0.021	0.002	0.002

\* not determined.

able to study much of the inland water makeup of the New Jersey area. He and his fellow researchers have found that metallic elements are important in determining fish productivity, and recreational or industrial usefulness of streams, lakes, and ponds.

New Jersey soils vary greatly in composition. Because of this, Dr. Toth reports the state was divided into North, Central, and Southern regions. The Southern region was subdivided into inner and outer coastal plains. Coastal plains are made up of sea deposits. In the tested areas, 4 major streams in each area were sampled at several sites. Samples were taken during both spring and summer flow periods. Results of these analyses can be seen in Table 1.

Dr. Toth cautions against taking a single sample of surface water. Waters vary, he says, according to the nature of the soils through which they flow. For example, Table 2 shows the findings at two sites of Big Flat Brook in the Northern region. Sampling site No. 1 lies in a calcareous soil area. Site No. 2 is in acidic soils. Result is that the calcium and magnesium content of the water sample at Site 1 is

**Table 2. Composition of Big Flat Brook Water at Two Sites.**

Element	(Calcareous)	(Acidic)
	Site 1	Site 2
	(ppm)	
Calcium	35.0	11.2
Magnesium	7.5	2.4
Potassium	6.6	0.6
Sodium	3.7	2.5
Iron	0.08	0.03
Aluminum	0.07	0.10
Silicon	2.5	4.0
Chlorine	11.5	4.0
Nickel	0.006	0.001
Copper	0.016	0.022
Chromium	0.002	0.002
Manganese	0.016	0.008
Zinc	0.010	0.010
Strontium	0.500	0.030

approximately 3 times higher than for the sample at Site 2.

**More Elements At Low Water**

Minor elements ranged from 0.001 to 0.129 ppm in the New Jersey area. Usually, the smaller water flow of summer periods had a tendency to increase the contents of these minor elements. For example, strontium is greater than zinc. Zinc is equal to copper. But copper proved to be greater than nickel which in turn was found in greater amounts than chromium.

In the Northern region of New Jersey, such major elements as calcium and magnesium were high during both spring and summer than other regions. This is because of the high limestone content of the particular soils these streams pass through. Other differences, some not related to soil base, were traced to specific agricultural practices in an area. Soils which are high in leaching losses will likely show

*(Continued on page 20)*





Small neighborhood park is being irrigated with an efficient wave-type sprinkling system. (Its control box is shown below.)

## Design Is Key For Effective

# Small Area Irrigation Systems

J. R. WATSON

Director of Agronomy, Toro Manufacturing Corporation, Minneapolis, Minnesota

Careful balance and adjustment of many complex factors are needed to properly water turf. The basic requirements are the same, whether the area is small or large. Regardless of size, the soil conditions, demand of climates, and the physiological requirements of the plants must be considered.

There are, however, irrigation problems with small areas which are not always found on larger sites. Examples include: complexity of landscape patterns or designs; space limitations; concentrations of plants with widely different water requirements, and frequently, limited water supply; poor quality of water; inadequate pressure; and poor or restrictive distributive systems.

The need to water small areas effectively may well be more critical than on larger sites. For, in total, the small areas such as home lawns, industrial lawns, school playgrounds, small community parks, athletic fields,

and, in some cases, intensively used sections of larger areas, constitute a very large part of the green and landscaped areas of our cities and towns. In this respect, they are valuable and necessary as well as functional and aesthetic. They constitute places to play and to relax. They filter the atmosphere of our com-

munities. They enhance the beauty and the value of property. When properly landscaped, maintained, and groomed, such areas attract visitors and invite industry. Thus they become economically important.

For these reasons, watering systems for small areas merit careful study, evaluation and se-

Compact Four Station Controller box regulates the system illustrated above.

